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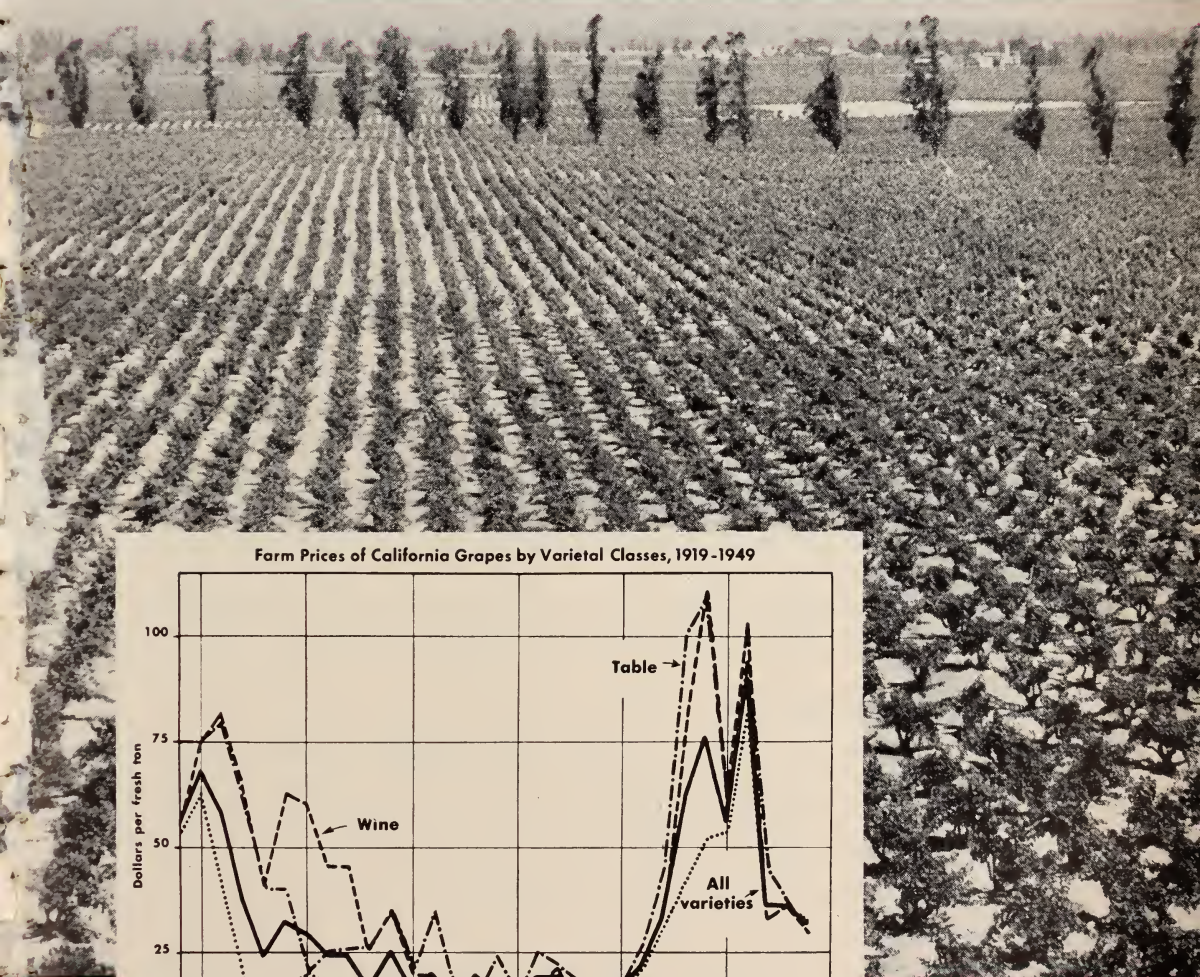
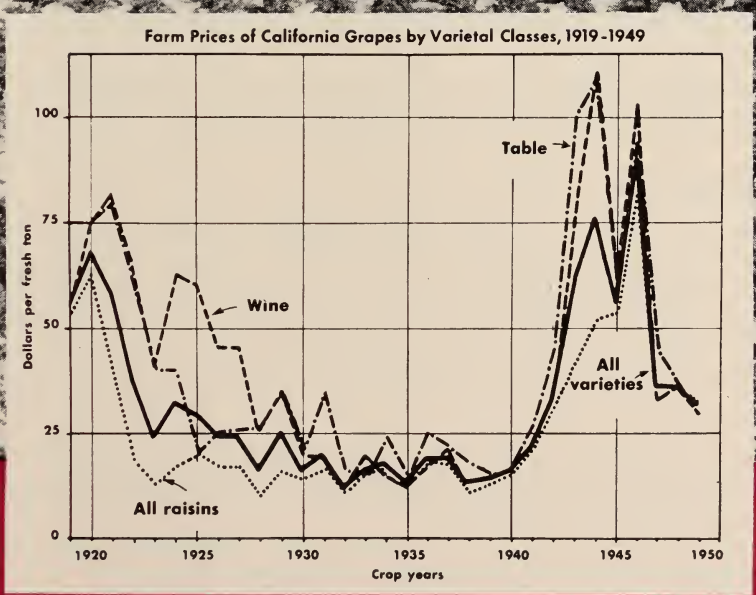
TRENDS AND OUTLOOK IN THE CALIFORNIA GRAPE INDUSTRIES

George L. Mehren and S. W. Shear





CALIFORNIA AGRICULTURAL EXPERIMENT STATION
THE COLLEGE OF AGRICULTURE
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This Circular

is an economic study of the grape industry in California and is aimed primarily at growers and processors of table, raisin and wine grapes. It is written in fairly technical language and discusses the basic trends in output, prices, costs, incomes, utilization, and distribution of grapes and grape products during the past 30 years. The major causes for these trends are also shown.

Briefly . . .

grape production in California (and therefore in the entire country) has risen steadily during the past 30 years. Bearing acreage has remained fairly constant since 1931. Increased yield, perhaps due to better cultural methods being employed, has been the major cause for increased production, which has outstripped population increase.

Year-to-year total production varies widely for all classes of grapes. Thus oversupply is an ever-present hazard, controlled mainly by the weather.

Some table and raisin variety grapes may be diverted into wine channels. This is a mixed blessing, because on one hand it enables the growers to seek the market which will make the best offer, but it tends to level off the prices offered in all markets and tends to flood some outlets if prices get much out of line.

Because of the hazard of overproduction and the ability of growers to divert grapes from one market to another, producers of all types of grapes are interdependent on one another to a high degree. And with these facts in mind, the following

Adjustments Are Recommended

Growers should adjust to a steady long-run expansion of production, which will necessitate expansion of markets.

The marketing mechanism for grapes must be flexible enough to handle differences in production of as much as 60 per cent from one year to the next.

The Wine Makers . . .

whose stabilization program is somewhat easier because of better storage possibilities and rapid conversion of raw materials from one product to another, have pointed the way for better marketing of all grapes. Specific figures for the wine industry are separated from the rest of this study in Section II, beginning on page 18.

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Trends and Outlook in the

CALIFORNIA GRAPE INDUSTRIES

I. THE ECONOMIC SITUATION

The California grape industry is for all practical purposes the national grape industry.

As shown in figure 1, grapes grown outside California declined slowly from a 1931 high of about 300,000 tons to about 200,000 tons today. During the same time, United States grape production rose from about 1,700,000 tons to 3,100,000 tons in 1946.

Figure 1 also shows that during the period 1920–50, raisin grapes comprised well over one-half the total California output. Production of table grapes was lower than that of wine varieties for most of the period, but now each of these accounts for about 20% of California grape output.

One problem of the industry is that production of all types has increased

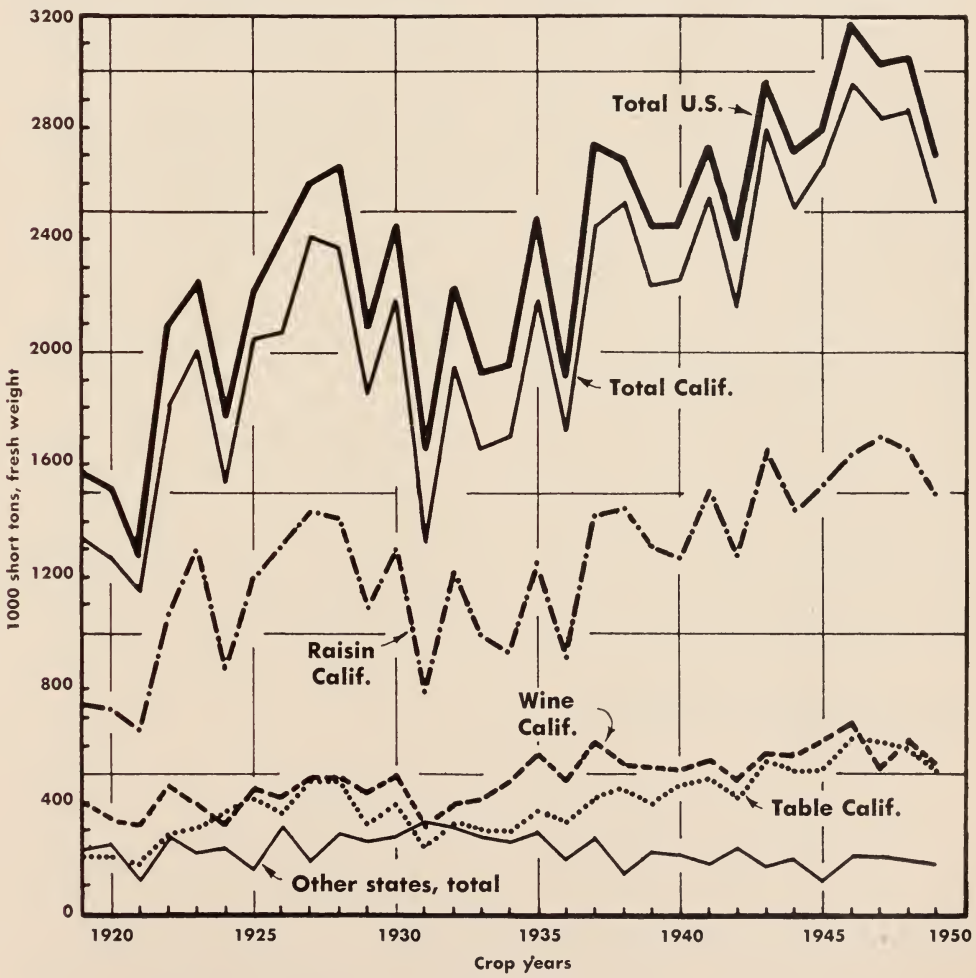

Fig. 1. Grape Production in California and the United States, 1919–1949

faster than the increase in population or the per capita consumption of grapes and grape products, while European commercial raisin markets have shrunk greatly. A second major problem, shown in figure 1, is that annual average output has increased steadily in a constant upward trend, but varying up and down around this trend are sharp annual fluctuations.

Output in successive years has varied as much as 800,000 tons. Such changes cannot be foreseen or controlled. They are not correlated with annual changes in purchasing power or with other market-demand determinants. In tons, the greatest changes in output from year to year are in raisin-type grapes, but in percentages the changes are not greatly different among varietal classes.

The grape industries must make several adjustments to meet production and market conditions. First, they must adjust to a steady long-run expansion of production that necessitates a continuous expansion of markets. Second, they must have a marketing mechanism sufficiently flexible to handle a total output which may be 1,900,000 tons, as in 1936, and which may jump to 2,700,000 tons the next year. Third, they must recognize that varietal classes may be used in several channels. That is, wine varieties go only for wine but some table and raisin varieties may also be made into wine. If production of wine varieties is heavy, the winery market for table and raisin grapes may be cut down and prices of these varieties may fall. If the output of raisin varieties is unusually heavy, more of the varieties may enter table and vintner markets. High output or low markets for any varietal class transfers almost their full impact into the other two classes. Thus prosperity or depression in one part of the grape industry means prosperity or depression in all parts.

Geographic areas of grape production may be marked out in California for analyzing acreage, yield, and utilization of the different classes of grapes and their products.

The San Joaquin Valley district—which dominates both grape and wine production—includes the counties of Merced, Madera, Fresno, Kings, Tulare, and Kern.

The Central Valley district comprises the counties of Sacramento, San Joaquin, Stanislaus, Calaveras, Tuolumne, and Amador.

The Sacramento Valley district; the counties of Shasta, Siskiyou, Tehama, Glenn, Butte, Colusa, Sutter, Yolo, Yuba, Nevada, Placer, and El Dorado.

The San Joaquin Valley, Central Valley, and Sacramento Valley districts together are called the Interior Valley.

The southern California district comprises the eight counties which lie south of the Tehachapi Mountains.

The Central Coast is divided into two sub-districts. The North Bay consists of Humboldt, Mendocino, Lake, Sonoma, Solano, Napa, and Marin counties. The South Bay includes Contra Costa, Alameda, Santa Clara, San Benito, San Francisco, San Mateo, Santa Cruz, Monterey, and San Luis Obispo counties.

Grape acreage has changed but little since 1931

California bearing acreage of all three varietal classes, as shown in figure 2, has been fairly constant since 1931. Once the boom of the late 1920's had passed, the grape industries settled down into an acreage pattern much like the present.

Thus acreage changes can not be said to be responsible either for the continuous expansion, or the wide annual shifts in grape production.

Figures 3, 4, and 5 on pages 6, 7, and 8, show the bearing acreage of California wine, raisin, and table grapes from 1923 to 1948.

Figure 3 indicates that the Central Coast district has the most acreage of

wine varieties and that the Sacramento Valley district (which was never important) has almost disappeared from the industry.

Figure 4 shows that the San Joaquin Valley district is the heart of the raisin grape acreage. No other district is of real importance.

Figure 5 shows that table grapes are concentrated in the Interior Valley, with the San Joaquin district dominating. The increase in recent years in the San Joaquin district has about balanced the decrease in acreage in the Central Valley. Other districts appear to be retaining the minor acreage they have long had.

When bearing acreage of all varieties is added for the several districts, the San Joaquin Valley leads in total acreage. No district of any importance has expanded its total acreage significantly in recent years, nor has there been any major change in the relative status of districts during the past 20 years.

Recent high production is due to high yields per acre

Changes in the production of grapes are associated closely with parallel changes in yield per acre. After the average yield per acre of all varieties dropped to a low of 2.5 tons per acre in 1931, it climbed to six tons in 1946.

Increases in yields per acre have differed among the varietal classes—in wine from 1.7 to 4.0 tons; in raisins from 3.2 to about 6.8 tons; and in table grapes from 2.4 to about 7.9 tons. As a per cent of the 1931 yields, however, the increases in yields by varietal classes did not differ greatly.

Two facts are clear in trends depicted in figure 6, page 8; the rate of increase is long-run and stable and is not correlated with the business cycle; the steady

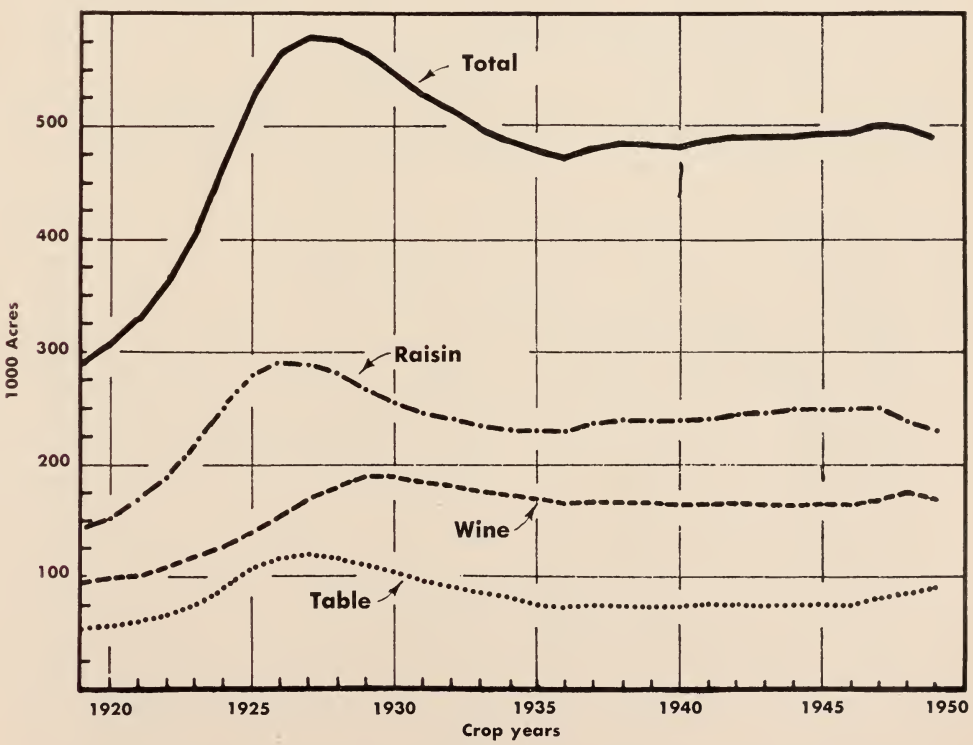

Fig. 2. Bearing Acreage of California Grapes by Varietal Classes, 1919–1949

upward trend over 15 years can hardly be considered due to weather.

If the rising output per acre—which explains nearly all the change in output of grapes—represents increased cultural efficiency, then very large crops may occur at any time. Total acreage is about the same as in 1946, the peak crop year. Given the same yields, the 1946 production of nearly 3,000,000 tons could be produced again in any year.

Per cent of full crop has tended to increase and fluctuate in close relationship to total production and to yield per acre, although variations exist among districts and varietal classes.

Utilization figures show some varieties interchangeable

Figure 7, on page 9, shows the utilization of all varieties of California grapes by per cent of harvested production from 1934 through 1949.

Marketing of grapes should be geared to the 3 production characteristics of the industries—expanding production, erratic production, and diversion of grapes into 2 or 3 outlets.

Figure 8, on page 10, shows production factors in detail: long-run increase, annual fluctuations, shifts in utilization.

In regard to the third characteristic, diversion into the several outlets, figure 8 shows there are 4 major uses for California grapes. They may be sold for fresh table use, sold for home crushing or other juice, crushed commercially, or dried for

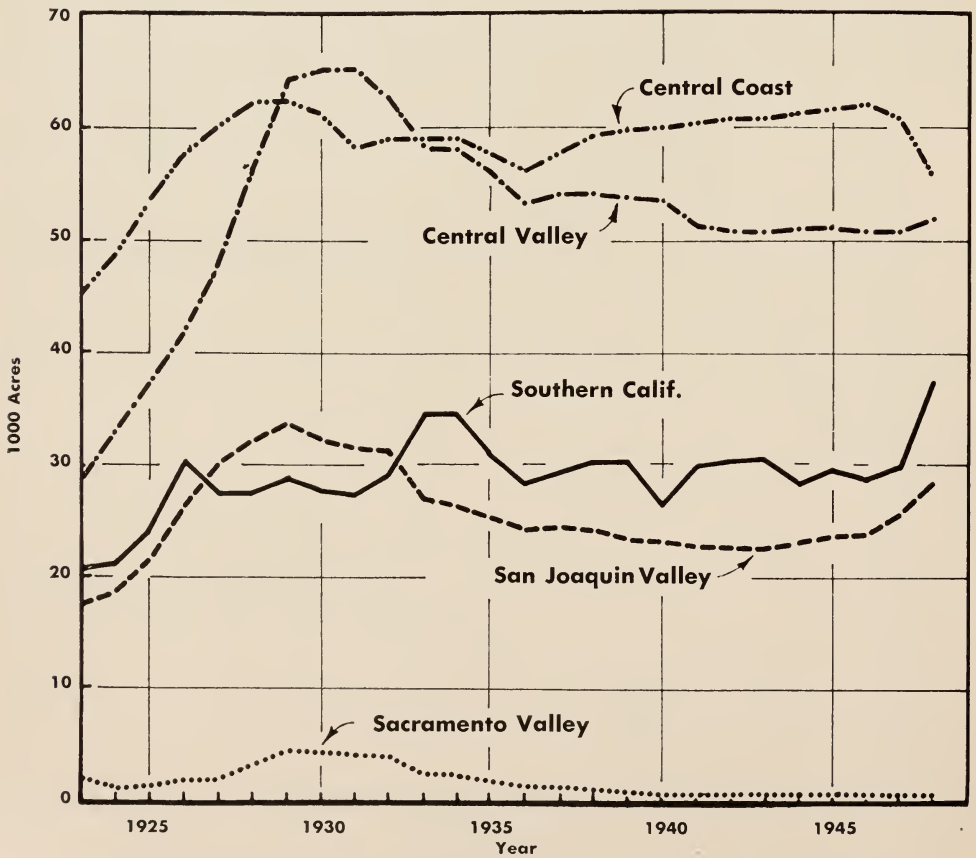

Fig. 3. Bearing Acreage of California Wine Grape Varieties by Districts, 1923–1948

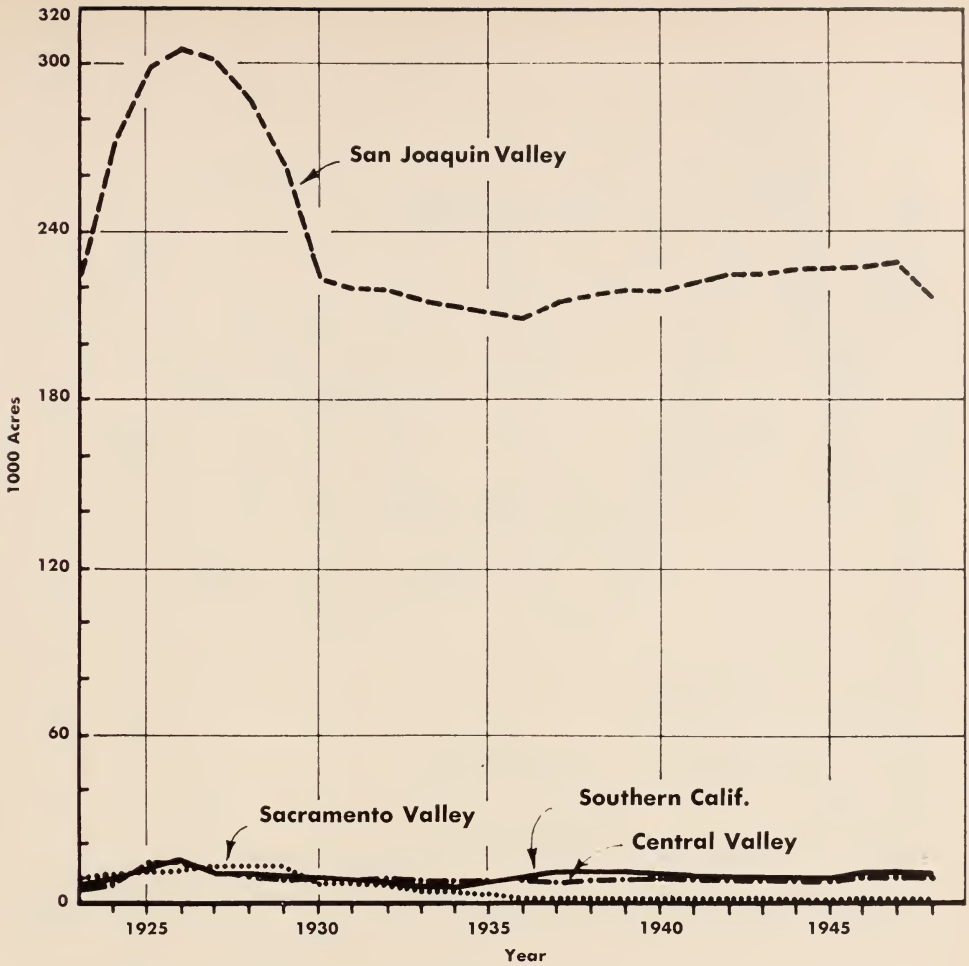

Fig. 4. Bearing Acreage of California Raisin Grape Varieties by Districts, 1923–1949

raisins. These markets are closely interrelated.

The fresh table market has grown steadily but at a much slower rate than the production of table variety grapes. During the peak year of 1947, about 450,000 tons went into table outlets. On the average, about 13% of California's harvested grape production of all varieties goes into table use. Deviations from this average show no systematic pattern. When the small annual changes in tonnage sold for fresh table use are considered against the wide annual variations in production of table varieties shown in figure 1, it is evident that there is a wide annual fluctuation in tonnage of table grapes diverted to wineries.

A long-run shrinkage in shipments of grapes for juice purposes other than commercial crushing has been taking place. Even in the five years prior to repeal in 1933, juice shipments fell sharply. Since 1933, grapes shipped for juice have declined slowly from about 200,000 tons to about 100,000 tons. It is probable that this outlet may shrink even further as the chief makers of homemade wines, immigrants from wine-drinking countries, become fewer.

Figure 8 shows that all three production factors had effect on the utilization

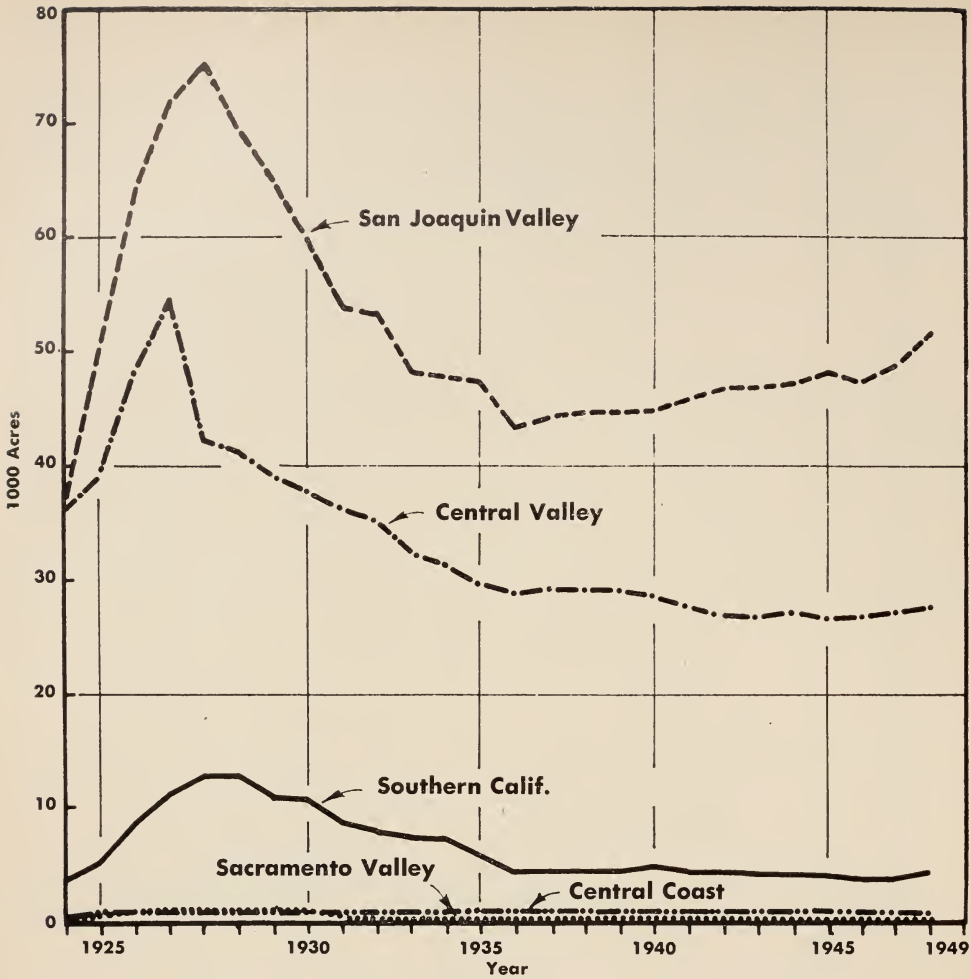

Fig. 5. Bearing Acreage of California Table Grape Varieties by Districts, 1923–1948

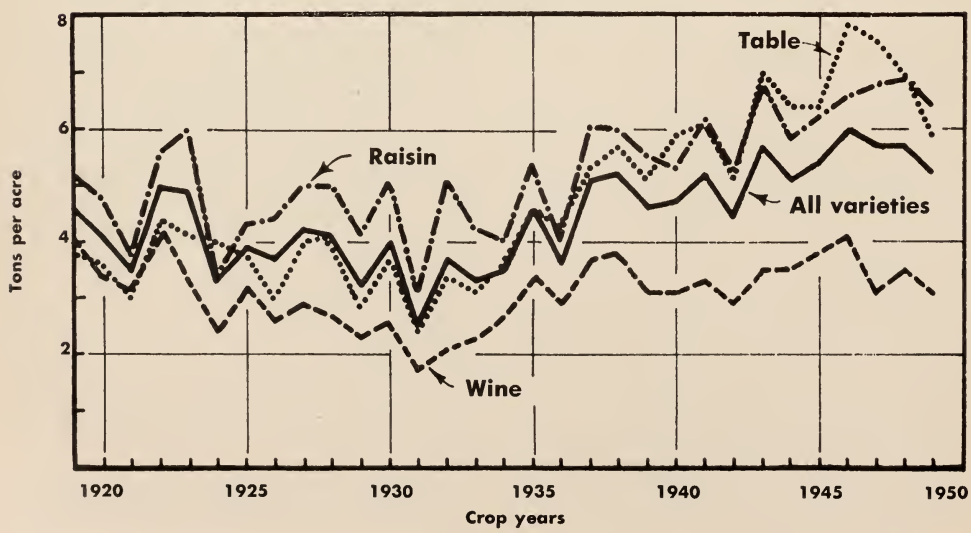

Fig. 6. Yield per Bearing Acre of California Grapes by Varietal Classes, 1919–1949

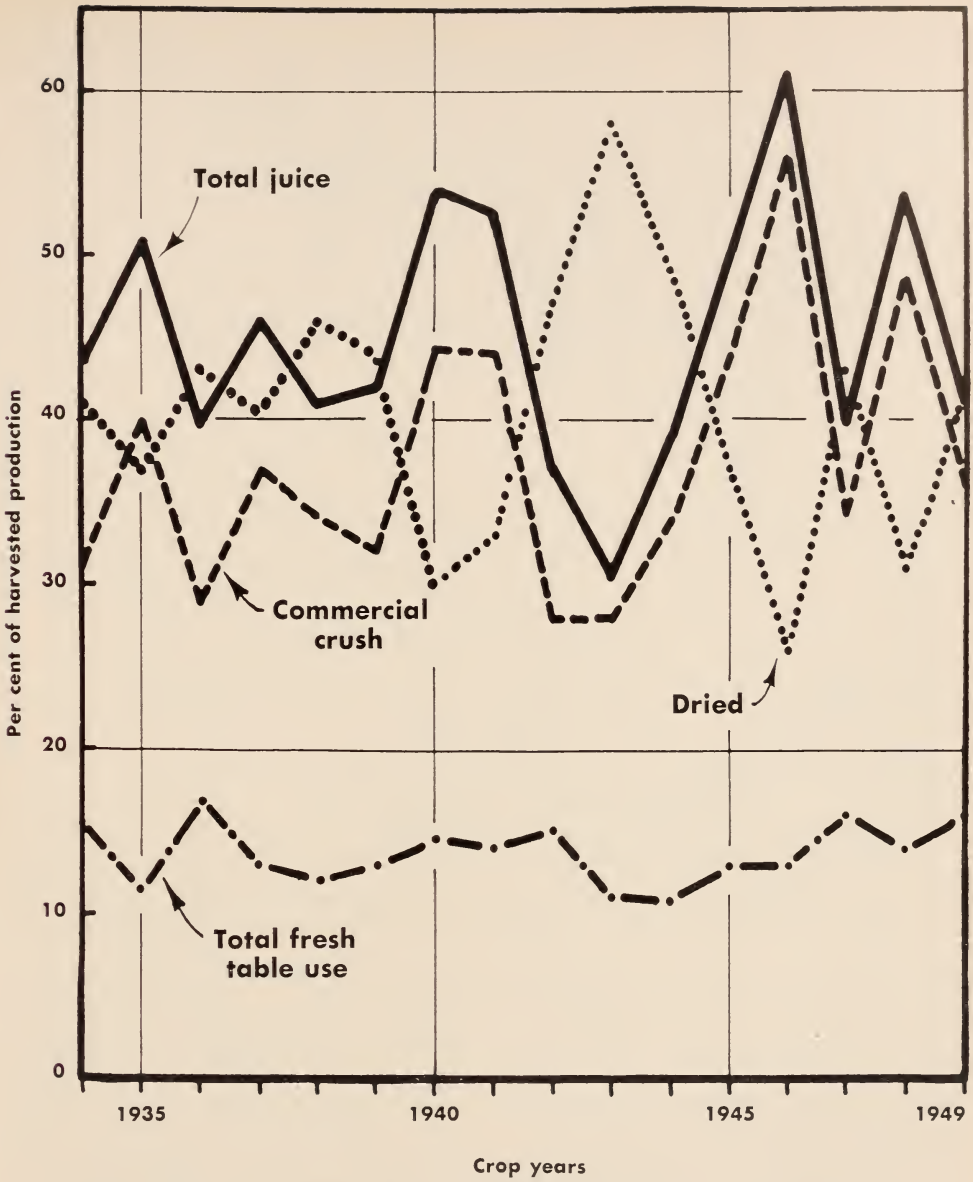

Fig. 7. Utilization of All Varieties of California Grapes: Per Cent of Harvested Production, 1934–1949

of grapes for commercial crushing. There has been a slow rise in this market outlet, except for the three war years of 1942, 1943, and 1944, when raisin varieties all had to be dried. Fluctuations in the crush in successive years have been as great as 600,000 tons of grapes—equal to 60,000,000 gallons of wine. Diversion of raisin grapes to wine has been affected by expectations of relatively low prices from the dried market, bad weather in the raisin industry, heavy production of either raisin or table varieties or of both, low price supports for raisins, or market controls. Similar conditions have been faced by both vintners and raisin producers. They have both had their supplies significantly determined by conditions in

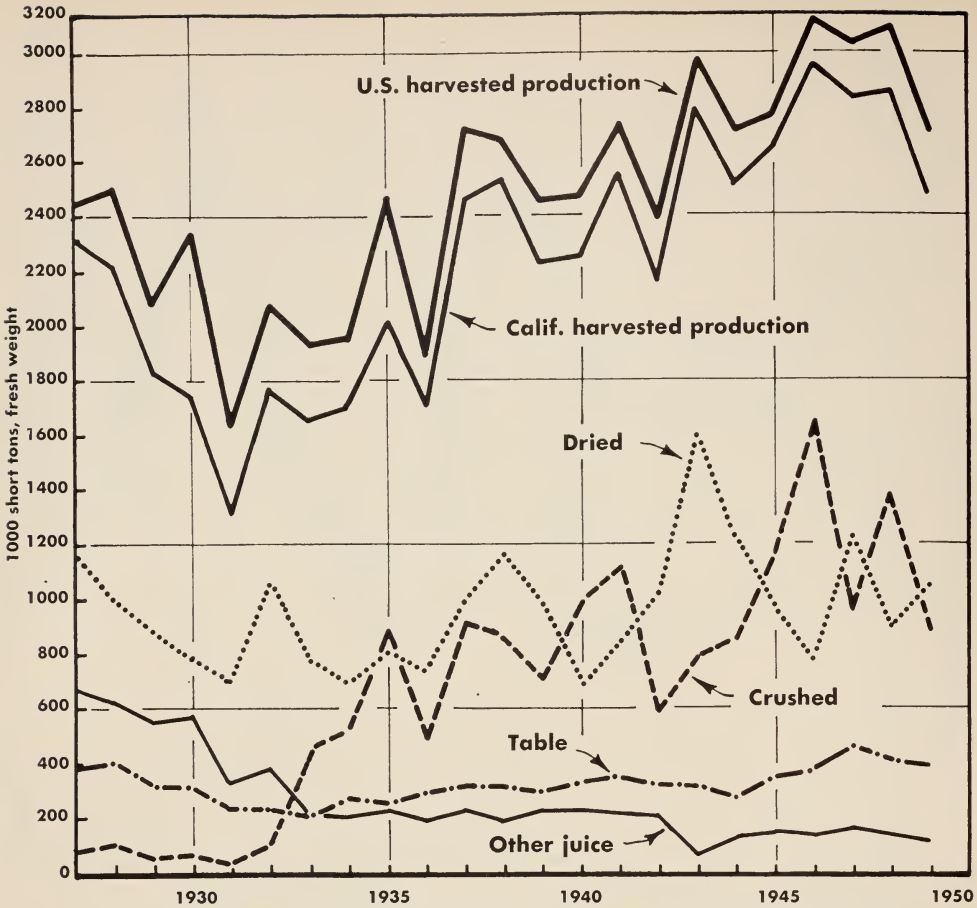

Fig. 8. California Production and Utilization of All Varieties of Grapes, 1927–1949

other segments of the industry. As a result, inventory values have shifted violently.

The quantity of raisins dried shows the same pattern as the wine outlet, with fluctuations appearing in opposite directions from the utilization for wine.

The lay of raisins on the tray for drying is influenced by the prices of wine and of table grapes, and vice versa. If prices for table use or for crushing are high in relation to prospective raisin prices, growers will divert from raisins until the raisin price rises and the table and winery prices fall so that roughly equal returns in all outlets tend to be realized.

In terms of grape production, raisin variety grapes constitute some 60 per cent of state output. Despite this dominance in grape production of raisin-varieties, wine is the major utilization of grapes. Annual per capita consumption of raisins has remained almost constant. A very slight down trend in per capita consumption which appeared before World War II seems to have resumed. At the same time commercial export markets which once constituted the major outlet of California raisins have virtually disappeared.

California grape production exceeded United States consumption by about 520,000 tons a year in both the period 1934–38 and 1945–48. Exports abroad, mostly as raisins to Europe, took a little less than 300,000 tons a year during 1934–38 and about 350,000 tons during

1945–48. Most of the balance went into increased inventories of grape products in both periods. The government diverted a few raisins into by-products in 1934–38, and in 1945–48 subsidized lend-lease, army civilian relief, and ECA shipments to Europe totaling about 75% of all raisin exports. During 1946, 1947, and 1948, the subsidy program accounted for one-third of the California dried raisin output and cost the taxpayers of the country about $40,000,000. The grower's share of this total averaged about $20 per year for every bearing acre of grapes in the state.

Thus government support alone has maintained the raisin export market. The subsidy program was carried out while commercial exports declined and per capita consumption decreased. Heavy competition from foreign raisin areas has continued. The raisin subsidy has been the means for federal aid to the whole industry.

Many table and raisin varieties are made into wine

A heavy crop of wine grapes can adversely affect prices for raisin and table grapes. Even though they are unsuitable for sale in other markets, an oversupply will lower prices in the winery channel, which induces heavier than normal usage of raisin and table grapes in their normal outlets.

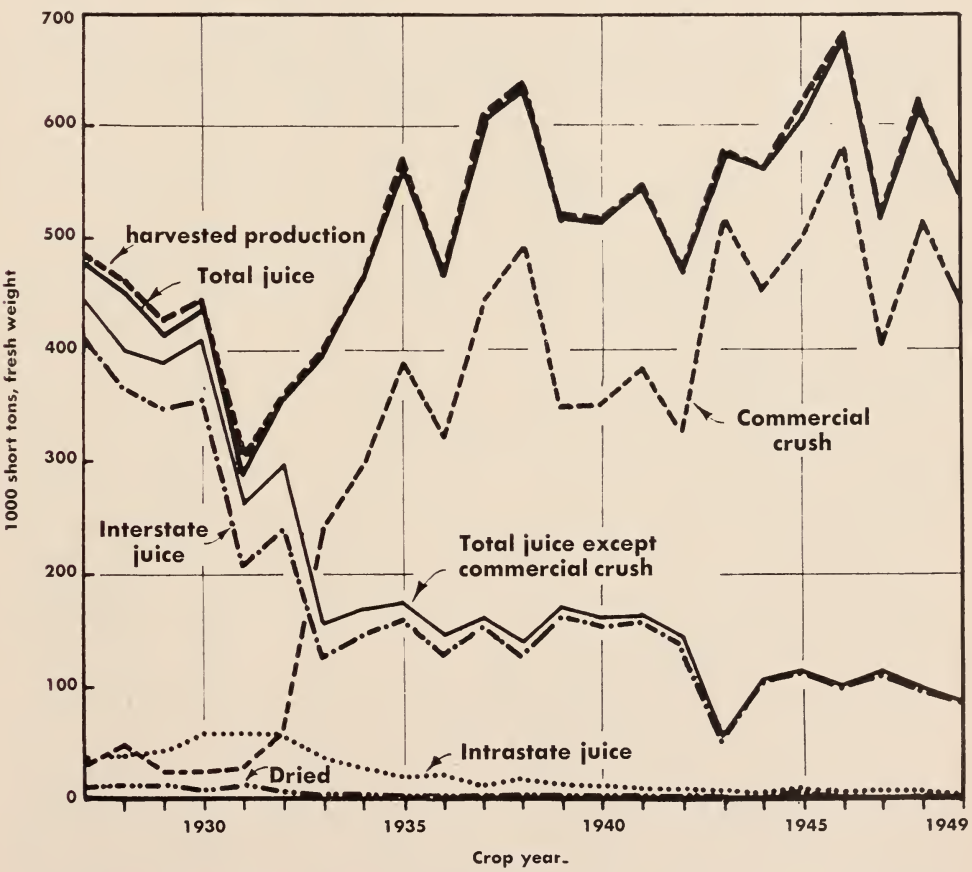

Fig. 9. California Harvested Production and Utilization of Wine Grape Varieties, 1927–1949

Major grape varieties are channeled into different uses in varying percentages, as shown below for the period 1945–48:

Variety	Fresh table use	Fresh juice	Comrcl. crush	Dried
Emperor	33%	0%	3%	0%
Thompson	29	0	26	95
Tokay	19	0	13	0
Other table	17	1	8	0
Muscat	2	25	11	5
Wine varieties ...	0	73	39	0

Tonnage going into fresh outlets has been fairly stable. There has been a steady decline in fresh shipments for juice. As a result of the rapid rise in the commercial winery crush since repeal this outlet now takes considerably more grapes each year than the dried outlet.

More than half the grapes labeled as table varieties go to wineries. Almost as many tons of raisin varieties as of wine varieties are crushed commercially. Thus the multipurpose nature of table and raisin varieties must be recognized, as well as the economic elements involved in the interlocking markets for all grape products.

Figure 9, page 11, shows the major changes since 1927 in the use of wine varieties.

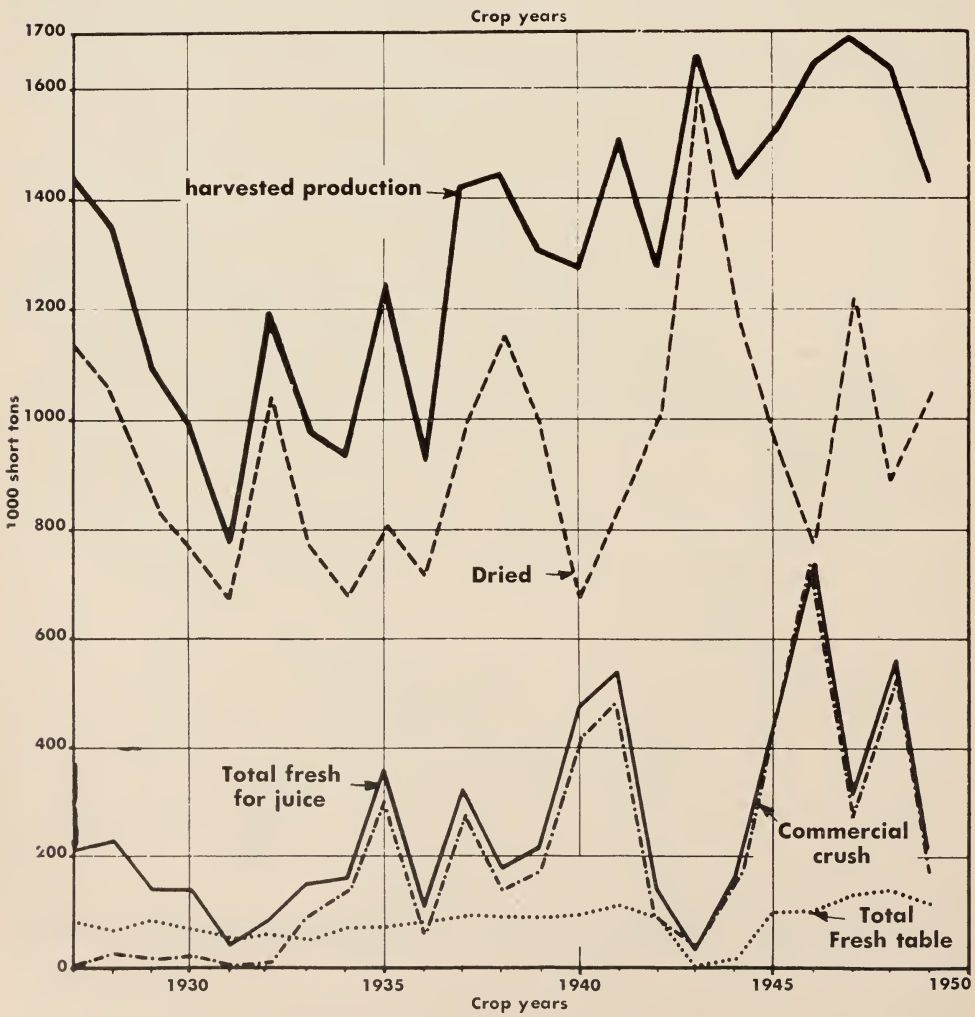

Fig. 10. California Harvested Production and Utilization of Raisin Grape Varieties, 1927–1949

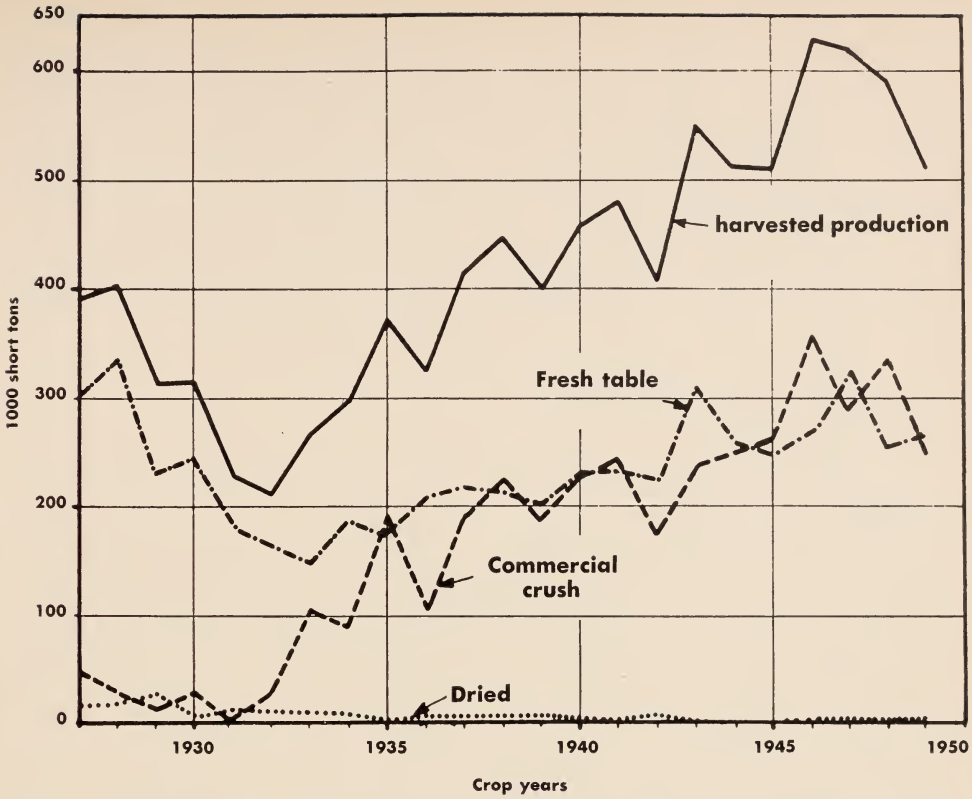

Fig. 11. California Harvested Production and Utilization of Table Grape Varieties, 1927–1949

The sharp drop in total shipments for juice other than commercial crushing at the time of repeal was to be expected. The trend to lower consumption by this method is likely to continue. Intrastate sales of wine grapes for juice have become almost negligible. Commercial crushing, the major outlet for wine varieties, has absorbed more than 500,000 tons of wine grapes in three separate years. It seems reasonable to expect that the commercial winery will be the only important commercial outlet for wine grapes in the future.

Production of raisin varieties, as figure 10 indicates, reached a peak of 1,700,000 tons in 1946. Fluctuations have been as high as 600,000 tons in successive years, with the greatest changes resulting from government directive during the war. Figure 10 also shows the striking yearly changes in use of raisin grapes for juice. In 1946, more than 700,000 tons of raisin grapes went to wineries, but in 1949, only 200,000 tons. A slow but steady rise in the use of raisin grapes in the fresh market has occurred.

California normally produces well over half of the raisins of the world. Loss of commercial exports and lower per capita consumption in the United States, in recent years, have compounded the problems of the raisin grape industry.

Harvested production of table grape varieties, as shown in figure 11, increased at a faster rate from 1932 through 1946 than did either wine or raisin varieties. A little over 200,000 tons were harvested in 1931; 650,000 tons were harvested in 1946. Fluctuations in table grape production have been less than those of wine and raisin varieties. Fresh table use and commercial crush account for almost exactly equal parts of the table varieties.

The very small tonnage dried seems to be disappearing completely.

The commercial crush has taken a larger percentage of the crop of table varieties than interstate fresh shipments in all years but two since 1937. Drying and interstate shipments for juice have both taken less than 1 per cent of the crop. Intrastate fresh sales for table use have averaged about 7 per cent of harvested production.

Neither exports nor imports of fresh grapes as table fruit has attained great commercial volume. Exports are still less than 50,000 tons per year. The government has not undertaken to subsidize fresh grape shipments to foreign countries. Imports have thus far exceeded 10,000 tons in one year only. Most imported grapes come, in small shipments, from the Southern Hemisphere in the late winter and spring.

Substitution of varieties helps to keep prices uniform

Figure 12 portrays growers' total returns for California grapes by varietal classes for the past 30 years.

Since 1925, total receipts from raisin varieties have exceeded receipts from either wine or table varieties, and the differential appears to have widened in recent years. The returns to growers at first delivery point from wine and table varieties appear to have been about equal for nearly 20 years. Since acreage of the two types is different, as is yield per acre, the gross receipts per acre from table grapes are larger. However, in growing table grapes for fresh shipment, costs are also larger.

Figures 13, 14, and 15 show returns to growers per ton by type of utilization. The similarity of price behavior among the three varietal classes is due to the fact that all of them to some degree, and some of them to a great degree, may be used in several outlets. When the average prices received for the various channels are compared by varietal classes, a close relationship is readily apparent.

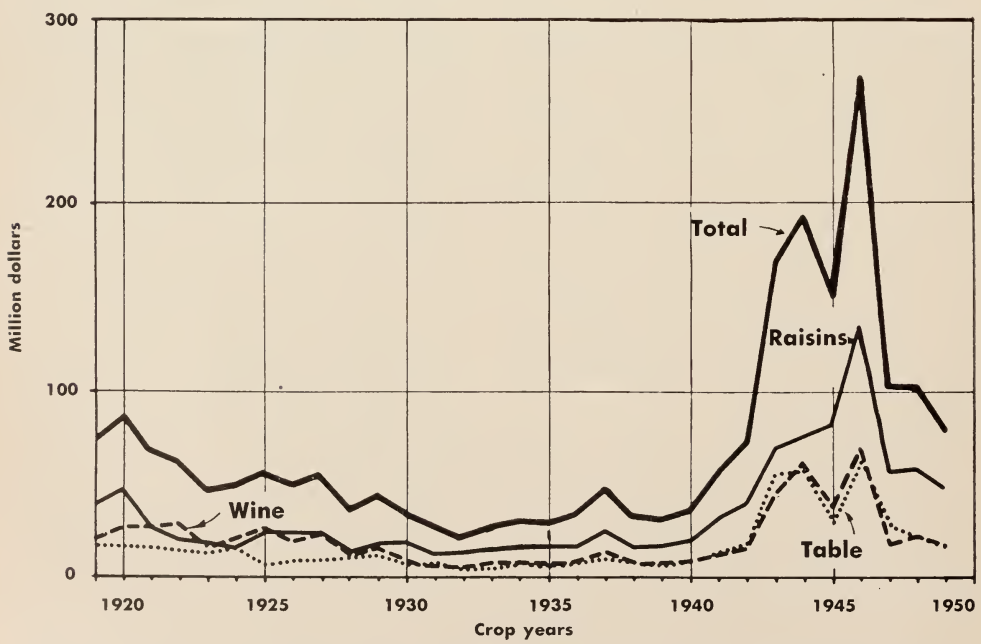

Fig. 12. Growers' Total Returns for California Grapes by Varietal Classes, 1919–1949

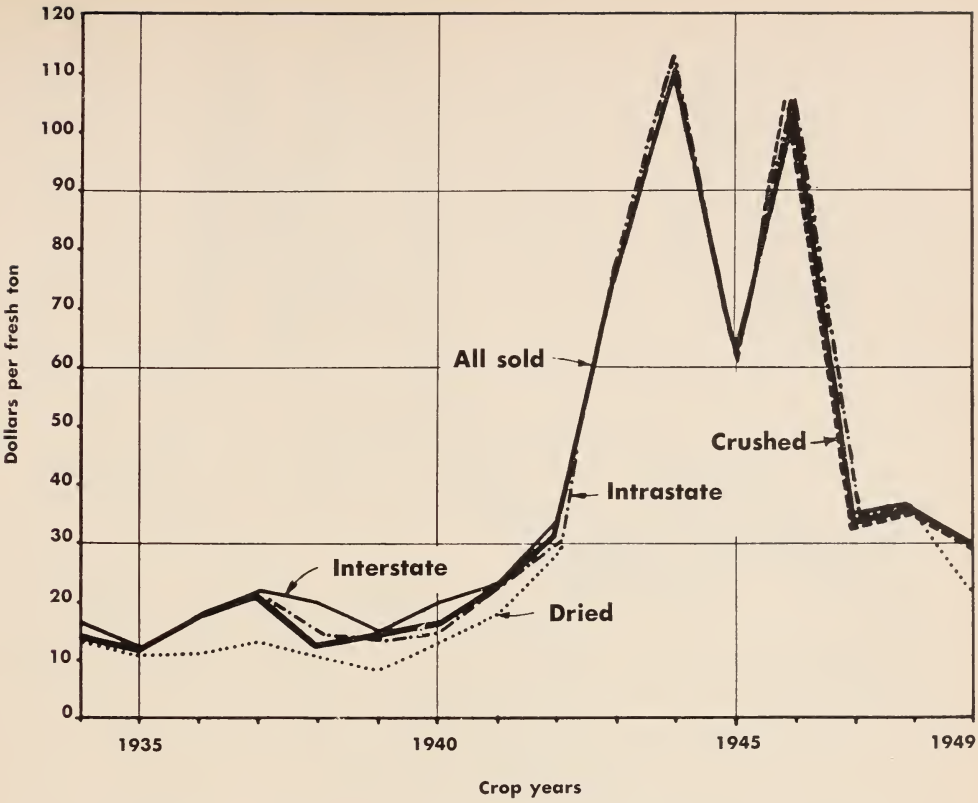

Fig. 13. California Wine Grape Varieties: Returns to Growers per Ton by Type of Utilization, 1934–1949

Grapes crushed for wine or brandy average about the same price per ton whether they are raisin, wine, or table varieties. So far as this outlet is concerned, the customary use of such grapes as Tokays and Muscats for wine and Thompsons for fresh table shipments make precise classifications impossible.

Figure 16 shows marked deviations from 1942 through 1947. These were war phenomena, caused by government regulation of both the use and price of raisin grapes. The enforced drying of raisin grapes shorted the winery and fresh shipment outlets, resulting in higher prices from these outlets.

It is valuable for growers to know that grape prices for winery or distillery have returned almost the same average. This would indicate either that the growers are unaware of opportunities in the different markets, or that over the wine industry as a whole the varietal classes are almost perfectly substitutable.

In regard to grape prices generally, as long as growers are able to estimate what prices for different uses will bring, they will divert to the use bringing the highest price. The effect is that prices are brought down in the channel into which grapes are diverted and raised in the other segments from which tonnage is diverted. The process continues until field prices run about the same for all uses of grapes.

Please turn to next page for figures 14, 15, and 16

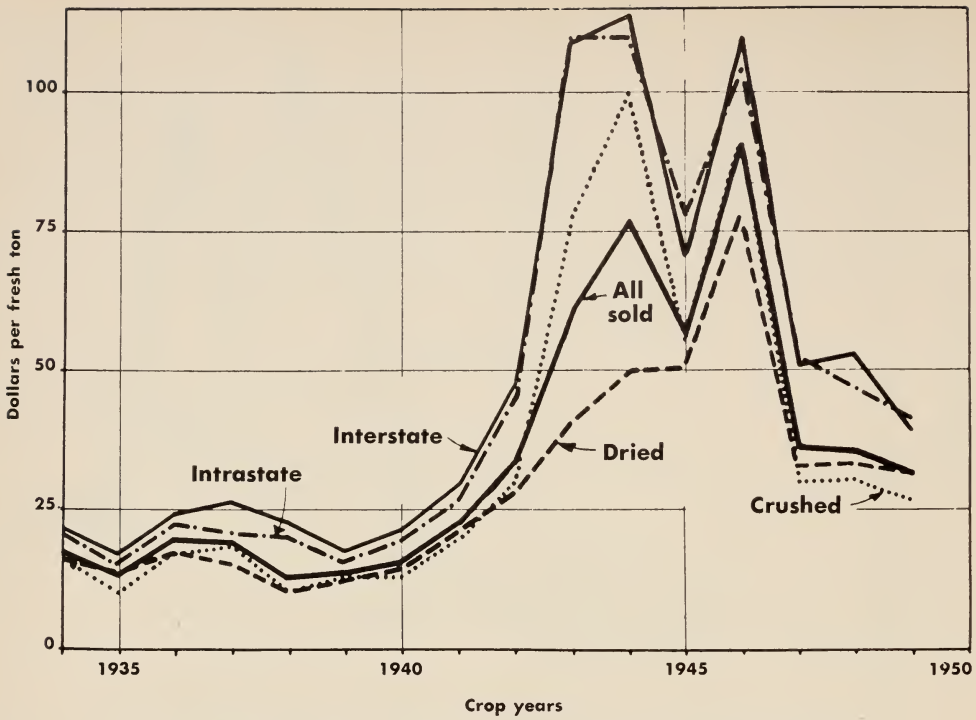

Fig. 14. California Raisin Grape Varieties: Returns[a] to Growers per Ton by Type of Utilization, 1934–1949

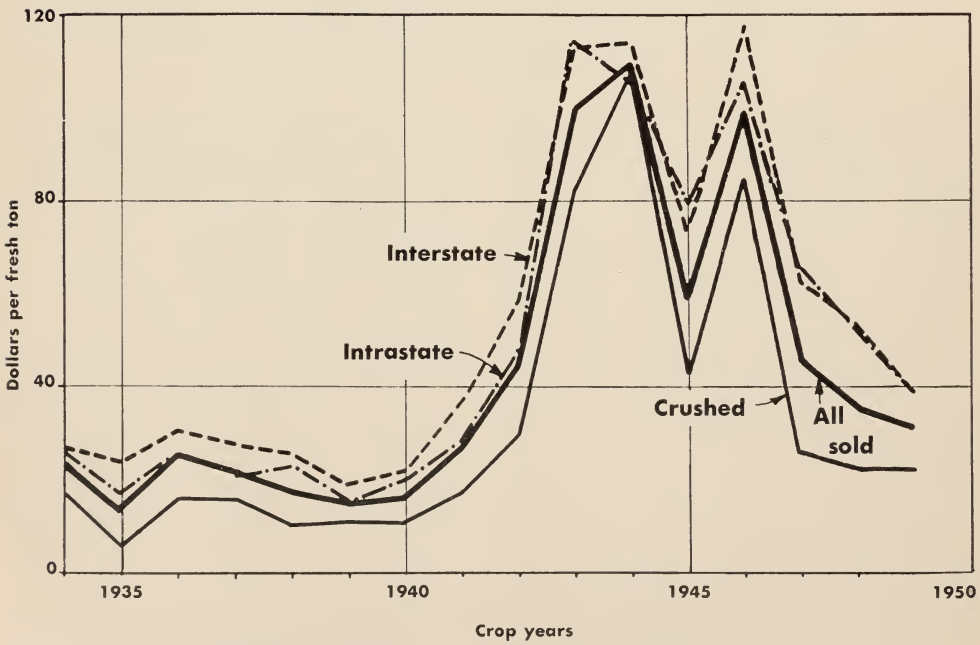

Fig. 15. California Table Grape Varieties: Returns to Growers[a] per Ton by Type of Utilization, 1934–1949

[a] Season average equivalent return to growers for bulk fruit at first delivery point.

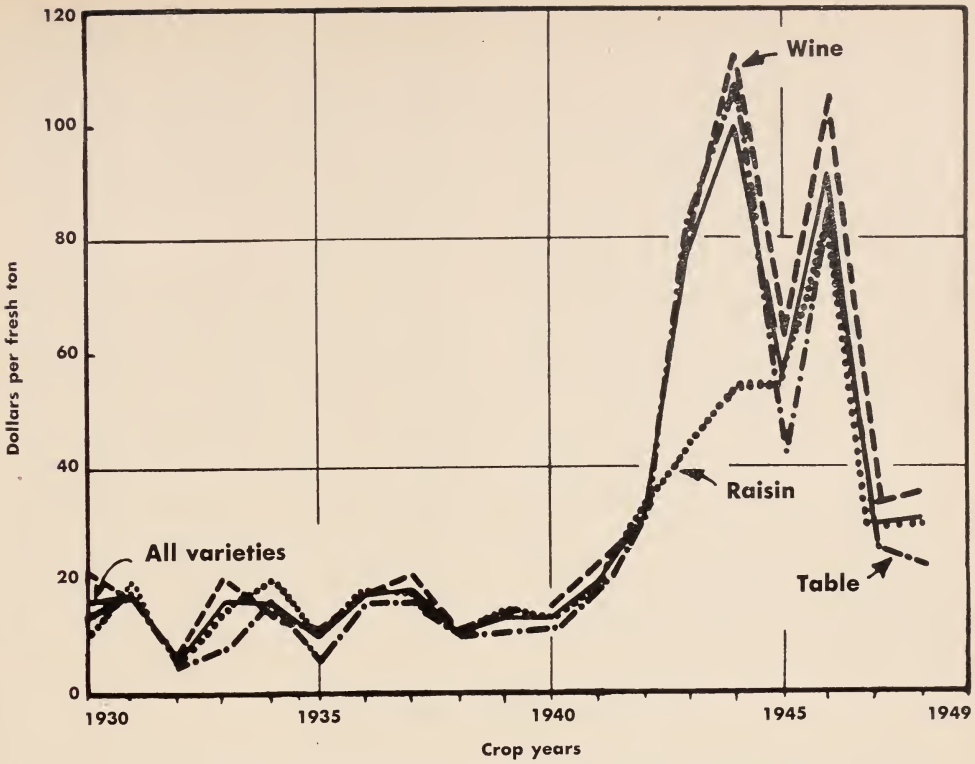

Fig. 16. Prices[a] of California Grapes, by Varietal Class, Crushed for Wine and Brandy, 1930–1949

Better marketing organization is needed for stabilization

In terms of industry organization, the interrelationship among grape uses must be considered in any adjustment program. Growers, processors, and handlers must realize that the problems of increased production, fluctuation in production, and diversion to the four main uses can be solved only by action on the part of every segment of the grape industry, since it is really a single industry composed of several closely related parts.

Such an approach to the problems of marketing in the grape industries is similar to that taken in many other farm industries faced with like situations. There are two ways, however, in which the grape industries differ from most of the other businesses.

The first difference is the compelling tradition in the grape industries that all production shall be used, even if prices for all or most parts of the supply drop to the costs of harvesting and packing. This custom is so strong that even damaged grapes or grapes that can't be sold for other uses are generally crushed by wineries or distilleries, almost regardless of variety, quality, or condition.

The second difference is the greater complexity in the structure of the grape industry, when compared with most others. The grape industries have more integrated and interdependent parts permitting easier shifting of raw materials than is true of most farm industries.

Increased output has stimulated efforts to expand markets. Private advertising has been a leading device for such pro-

motion in all segments. Wine and raisin segments have used state laws for industry-wide promotion.

The raisin and wine segments of the industry have set up programs to control sales, but only Tokays have done so in the table grape segment. For a long time, the Tokay program has controlled both the rate of flow to the fresh market and minimum quality of shipments. The raisin and wine groups have developed supply control programs and are inquiring into quality control. The wine industry has availed itself of resale price maintenance and loss leader laws. A stabilization fund has been set up to finance diversion from wineries if and when necessary. A government order regulates total commercial raisin sales. It is integrated with government purchase or diversion programs for raisins which have been in effect most of the time for about 15 years. The programs have sought to benefit the entire grape industry through removal of as many as 500,000 tons of grapes from the market in a single year. The support of raisins is not mandatory under the law, however. Industry organization is by no means complete.

Widely different views exist among persons, areas, and enterprises as to the fundamental desirability of industry stabilization. These are respectable differences and are slowly being resolved. Results of attempted stabilization are difficult to appraise in regard to industry improvement, as compared with loss of individual control over enterprise. The main trouble is flooding or shorting markets as a result of changing supplies and prices in total or in segments.

II. THE WINE INDUSTRY

Gross production of commercial wine in California increased from 40,000,000 gallons in 1933, to over 175,000,000 gallons in 1946, as shown in figure 17. In 1947, it dropped to 100,000,000 gallons, but was up again to 140,000,000 gallons in 1948. Dessert wine volume was about 70,000,000 gallons in 1949, a decline from the 1946 peak of 130,000,000. Table wine production has also varied greatly. It averaged about 26,000,000 gallons a year before the war. A peak of 47,000,000 gallons was reached in 1946 but only 27,000,000 gallons were made in 1949.

The California wine industry has partial control over its wine supply, if not its raw materials, in two ways. One method is the opportunity to store wines and thus cushion the impact of variable production upon sale. The other way is the opportunity to vary the gross gallonage put into different kinds of finished wines, brandy for fortification, and related products. As a result, the fluctuations in net finished production, while perhaps more violent than desirable, are smaller than the shifts in gross production.

The California wine industry has a storage capacity, including fermenters, for over 300,000,000 gallons of wine. Of this total, the San Joaquin Valley has 45 per cent, the Central Valley 26 per cent, North Bay region nearly 16 per cent, southern California 8 per cent, and the South Bay region about 2 per cent.

In 1949, there were 375 active bonded wineries in the state and 111 fruit distilleries. In the North Bay area of the Central Coast, wineries are concentrated in Napa and Sonoma counties. They are also numerous in Santa Clara, Contra Costa, and Alameda counties. In the Interior Valley, the wineries and distilleries, like the storage capacity, are largely in Fresno and San Joaquin counties. These wineries have a far larger average capacity per winery than those on the Central Coast. Most of the fruit distilleries are in the Interior Valley.

The wine segment of the grape industry has marketed a rapidly expanding

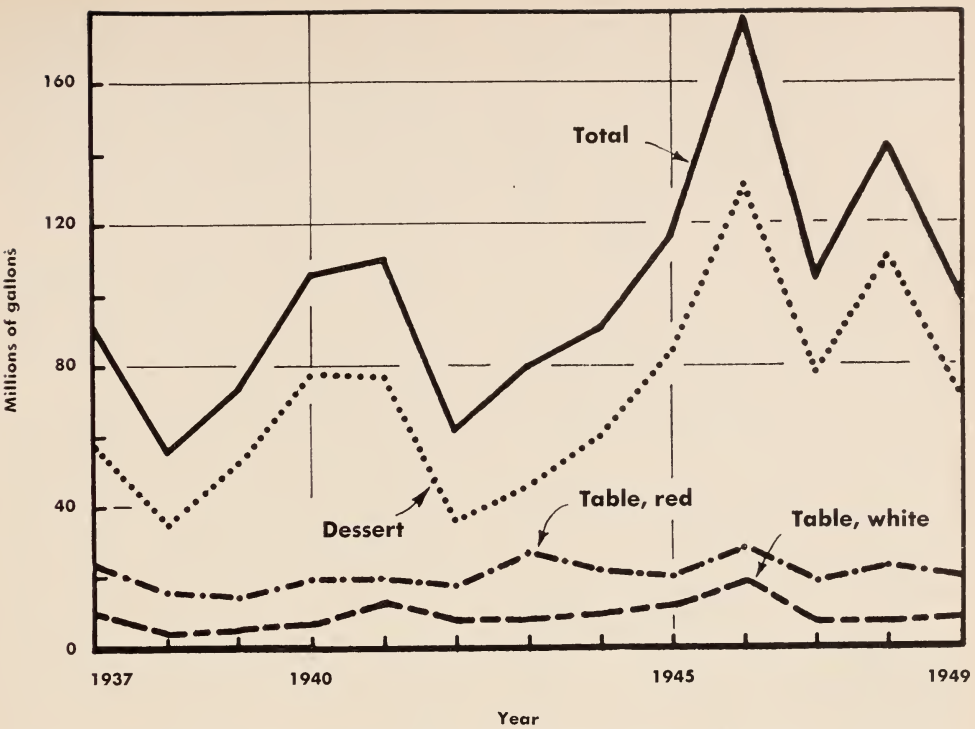

Fig. 17. California Gross Still Wine Production by Classes during July–December, 1937–1949

output with varied success over many years. Both storage and processing of gross production into distilled spirits for fortification have evened out annual supplies. These methods, however, have not fully countered the erratic nature of wine production.

For instance, in 1946, when the size of the year's bumper crush became known, winery prices of bulk wines broke nearly $1 per gallon on dessert wines and nearly 70¢ on table wines. In the 1947 season, average prices of grapes for raisins, table use, and for wine all broke when it became known that winery purchase of grapes would necessarily be much lower than in 1946, due to heavy inventories and low wine prices.

The bulk of crushing in the California winery season is concentrated within about 10 weeks from early September to mid-November. Peaks are usually reached in October. The time pattern of crushing varies both with the weather conditions for the season and with the size of the total grape crop.

Sugar content has been found to vary widely by districts and varieties. Available evidence indicates that specifying minimum sugar content for grapes may not yet be used effectively as a means to control either quality or volume of wine.

Wine grape production is heavy in just 2 districts

Production of wine is concentrated in three regions of California—the Interior Valley, the Central Coast, and a small area in southern California. The Interior Valley stretches from Sacramento County south to Kern County and includes the San Joaquin Valley and the Central Valley.

During 1945–48, districts ranked as follows in average annual gallonage produced and in tonnage and per cent of the total state crush:

	Production in million gallons	Crush tons	Per cent of state crush
San Joaquin Valley	63.1	669,700	53
Central Valley	34.1	360,400	28
North of Bay Region	17.1	117,000	9
Southern California	9.0	90,000	7
South of Bay Region	4.6	37,000	3

The Interior Valley produces about 90 per cent of the dessert wine of the state and a little over one-half of the white table wine. The Central Coast, especially the North Bay area, is the major producer of red table wines.

Districts ranked as follows in wine gallons produced and in percentages of the state totals during 1945–49:

	Production in million gallons	Per cent of state total
Dessert Wine (14% to 25% alcohol by volume)		
San Joaquin Valley	56.4	59.0
Central Valley	29.8	31.2
Southern California	6.1	6.4
North of Bay	1.7	1.8
South of Bay	1.5	1.6
Red Table Wine (not over 14% alcohol by volume)		
North of Bay	12.7	57.4
San Joaquin Valley	2.8	12.8
Central Valley	2.4	10.7
Southern California	2.3	10.4
South of Bay	2.0	8.7
White Table Wine (not over 14% alcohol by volume)		
San Joaquin Valley	3.9	37.0
North of Bay	3.0	28.8
Central Valley	1.9	17.9
South of Bay	1.1	10.9
Southern California	0.6	5.4

There have been no notable changes in the relative positions of the districts since repeal, except that the proportion of the state total of white table wine produced in the Interior Valley has increased from about 44 per cent before the war to 54 per cent during 1945–48, with a corresponding decline in the rest of the state.

Stocks of wine on hand as of July 1st of any year plus net finished production during the next 12 months are the merchantable supply over that period.

After repeal, California supplies of dessert wine rose from about 25,000,000 gallons in 1933 to about 100,000,000 in 1939. They reached a peak of 190,000,000 gallons in 1948, and fell to about 175,000,000 gallons in 1949. Supplies of table wines rose from about 30,000,000 gallons in 1933 to nearly 50,000,000 in 1939. The peak of 62,000,000 gallons was also in 1948.

Growth in supplies of both wines has been in a fairly uniform manner. To the extent that this growth has been free of the fluctuations in raw grape production, the wine industry, by careful management, has freed its selling market of alternate oversupply and undersupply.

Dessert wine consumption has expanded rapidly

Estimated production and consumption of homemade wine averaged nearly 35,000,000 gallons just before the war but has fallen to about 20,000,000 gallons today. Dessert wine consumption has risen almost in a straight line since 1933 from 10,000,000 gallons to more than 90,000,000. The three components of the industry—homemade wine, commercial table, and commercial dessert wines—have risen to an annual total of about 140,000,000 gallons apparent consumption.

Per capita consumption of wines in the United States has more than doubled since 1933. Average apparent consumption is now about one wine gallon per person per year, of which commercial dessert wines account for about 63 per cent. Lowest of all is per capita consumption of homemade table wines, which dropped from about one-quarter gallon per year to about one-eighth gallon per year. Per capita annual consumption of commercial table wines peaked at almost three-tenths gallon during the war but has since declined to about two-tenths gallon.

Per capita consumption in California has fallen from a 1935 level of about four gallons per year to less than two gallons

in 1948. Part of the decline may be due to the entry into the state of new populations less accustomed to wine. How much of it is due to price policies, competition from other goods, or other causes is not known at the present time.

The per capita consumption of grapes has expanded faster through the dessert wine segment of the grape industries than through any other branch. Per capita table wine consumption decreased in recent years. The raisin decrease has been slow but steady. Table use has changed but little.

Distillation for spirits takes part of the supply

Almost all the brandy made in California is made from grapes. About 90 per cent is neutral spirits for the fortification of dessert wine and only about 10 per cent is beverage brandy. The exact quantity of grapes so used is difficult to determine since reports are made in terms of gallons of materials for distillation and such materials vary widely in alcoholic level.

Raisins have never been a major source of raw materials for distillation. Minute amounts are used directly in wine. A raisin industry surplus diversion program resulted in a prewar peak in 1939 of about 21,000 tons of raisins being used for brandy or spirits, the equivalent of about 85,000 tons of fresh grapes. In 1945, an unusual set of wartime conditions resulted in 33,000 tons of raisins, or 130,000 equivalent tons of fresh grapes, being so used. This wartime utilization has shrunk greatly. Only about 7,000 tons of raisins were used for brandy or spirits in 1948. Data are not available to indicate the degree, if any, to which rain-damaged or other injured raisins, packing-house rejects or other raisin residues are diverted to wineries or distilleries.

Total stocks of brandy, beverage and neutral spirits on hand July 1st in California reached a peak of about 17,000,000 gallons in 1939 as the result of the 1938 program that diverted surplus grapes into a brandy pool. Stocks were about 8,000,000 gallons in 1949. Since repeal, gross production has climbed sharply from less than 10,000,000 gallons per year to more than 40,000,000 in 1946. Since then, annual production has averaged about 30,000,000 gallons. Gross disappearance has been about equal to gross production, so the total gross supply usually has closely followed the gross production pattern.

The fruit brandy market is largely a grape brandy market which is tied to fortification of dessert wines. The making of grape brandy and spirits may therefore be expected to follow about the same development pattern as the production of dessert wines. Beverage brandy production and disappearance (apparent utilization based on tax-paid withdrawal records) have both been about 2,000,000 to 3,000,000 proof gallons per year since 1946.

Wine situation is summarized in these graphs

Figures 18 and 19 depict production, stocks, supply, and disappearance of California dessert and table wines since 1933 for years beginning July 1.

Except during the war years, when stocks fell well below disappearance, the dessert wine industry in California has carried July 1 stocks of about the same amount as annual consumption.

Stocks of table wines, however, have considerably exceeded each year's consumption since 1933.

Figure 20 shows production, stocks, supply, storage cooperage, and disap-

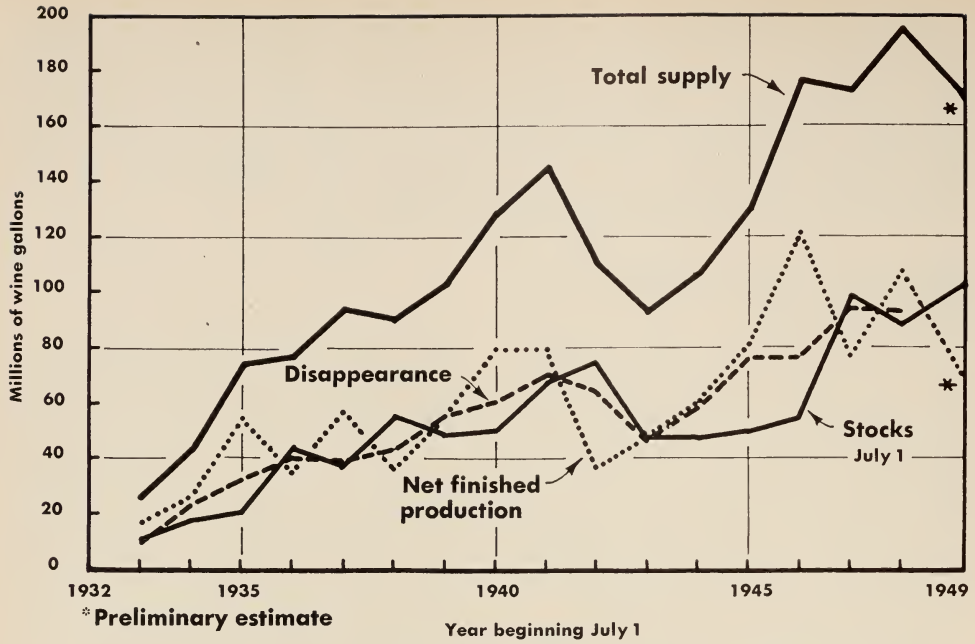

Fig. 18. Dessert Wine: Production, Stocks, Supply, and Disappearance of California Commercial Still Wine, 1933–1949

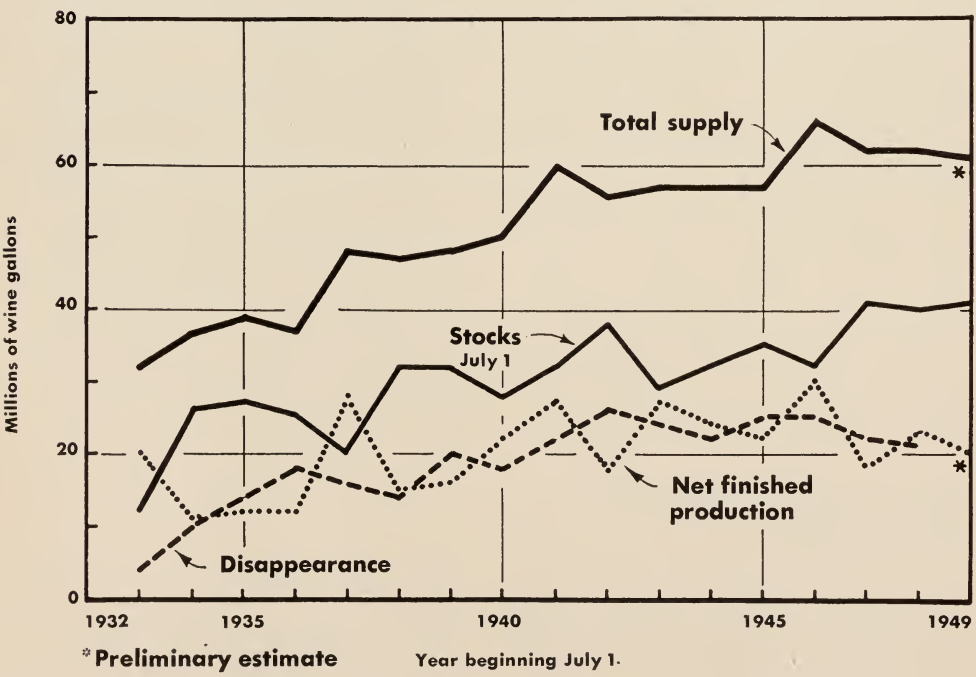

Fig. 19. Table Wine: Production, Stocks, Supply and Disappearance of California Commercial Still Wine, 1933–1949

pearance of California commercial wine since 1932 for years beginning July 1.

California storage and fermenter cooperage has increased from about 70,000,000 gallons in 1933 to about 310,000,000 gallons today.

The maximum total supply of all California commercial wines was reached in 1948, when well over 250,000,000 gallons were available. Estimated total supply for the 1949–50 year is between 230,000,000 and 240,000,000 gallons. Net finished production of still wines has increased steadily since repeal but at a lower rate than total supply or storage cooperage. Total stocks have run at about the same level as net finished production and total wine disappearance, but the latter has been subject to less marked variations.

The immediate outlook is for relatively short stocks, especially for dessert wines, after July 1st, 1950. The size of the 1950 crush can not be predicted because total grape production can not be accurately forecast.

Future prices dependent on the business situation

Records of several large wineries, a banking organization, and a federal lending agency were consulted for wine price trends since repeal. These trends are depicted in figure 21 in prices for bulk wine f.o.b. California wineries, beginning

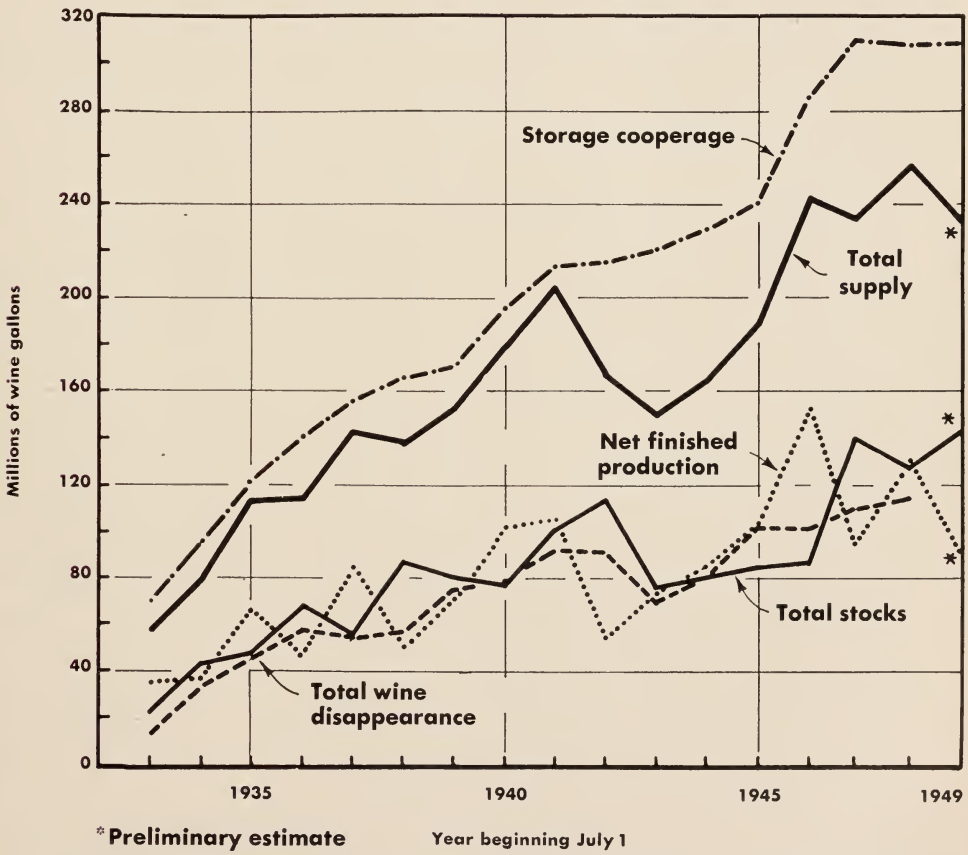

Fig. 20. Total Production, Stocks, Supply, Storage Cooperage, and Disappearance of California Commercial Still Wine, 1933–1949

January, 1934, after repeal and omitting the three years of wartime price control, 1943–45.

Dessert wine prices were more than $1.20 a gallon for bulk wine f.o.b. the winery in January, 1934, shortly after repeal. Table wine prices were about 80¢. Prices of both declined rapidly during 1934. Dessert wines settled down at between 50¢ and 55¢ from 1935 until mid-year of 1937 and then declined slowly to 30¢ in 1941. Table wines averaged 30¢ per gallon until 1937 and then fell to 20¢ through 1940.

In 1941 prices began to rise, leading up to the war boom of 1946. During 1946, the year of heavy crush, dessert wines reached $1.45 per gallon and table wines $1.10. More than 1,600,000 tons of the 1946 crop were crushed in response to high winery prices for grapes and the uncertain raisin outlook.

After the 1946 peak, prices broke in both series. By the time of the 1947 crush, bulk prices for both types were below 50¢ per gallon. After the short crush in 1949, both price series turned up and rose rapidly after January, 1950, until dessert wines were about 75¢ per gallon in June and table wines about 42½¢ per gallon.

Prices for the 1950 vintage season will depend on a variety of circumstances. Inventories are short and rate of consumption has been high. The outlook in the next year will, however, be affected by general business conditions, which can not now be predicted. The size of the grape crop will affect the size of the crush. Trends in the raisin and table-grape segments will also be important in determining wine prices.

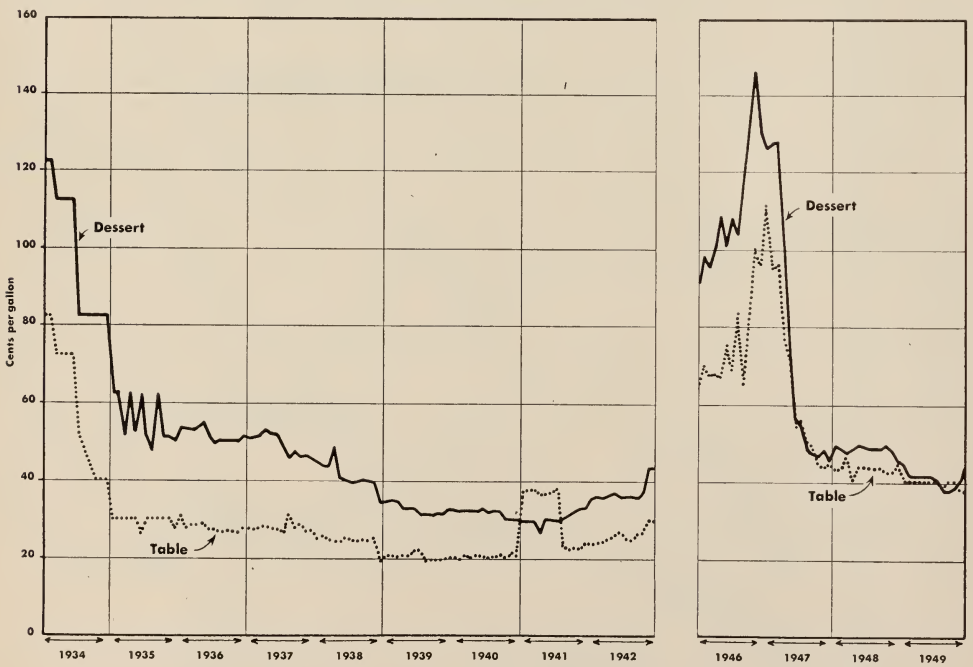

Fig. 21. Estimated Average Monthly Prices for Bulk Dessert and Table Wines, f.o.b. Winery, 1934–1949

The tables and figures appearing in this circular are summaries of some of the 80 detailed tables prepared by S. W. Shear which are published in a separate statistical supplement which gives sources in detail. This supplement may be obtained by writing to the Giannini Foundation of Agricultural Economics. The tables also appeared in Appendix C in "Economic Situation and Market Organization in the California Grape Industries," Mimeographed Report No. 107 of the Giannini Foundation of Agricultural Economics.

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